Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): An image sensor unit comprising

a first photodiode array for photoelectrically converting light of a first color from a source image into a first color output signal

a second photodiode array for photoelectrically converting light of a second color from a source image into a second color output signal

a third photodiode array for photoelectrically converting light of a third color from a source image into a third color output signal, wherein the first, second, and third color output signals are digitized into respective first, second, and third color pixel data each having a first number of bits per pixel

a fourth photodiode array for photoelectrically converting light from the source image into a monochrome output signal, wherein the monochrome output signal has higher gradation than the first, second and third color output signals is digitized into monochrome pixel data having a second number of bits per pixel greater than the first number of bits per pixel

a color signal correction unit to combine the monochrome output signal pixel data with the first, second, and third color output signal pixel data to provide first, second, and third enhanced color image signals having improved gradation compared to the first, second, and third color output signals.

Claims 2 – 17 (Canceled)

Claim 18 (Currently amended): A process for producing enhanced image signals comprising

providing a first photoconverter for photoelectrically converting light of a first color from a source image into a first color output signal

providing a second for photoelectrically converting light of a second color from a source image into a second color output signal

providing a third photoconverter for photoelectrically converting light of a third color from a source image into a third color output signal, wherein the first, second, and third color output signals are digitized into respective first, second, and third color pixel data each having a first number of bits per pixel

providing a fourth photconverter for photoelectrically converting light from a source image into a monochromatic output signal, wherein the monochrome output signal has higher gradation than the first, second and third color output signals is digitized into monochrome pixel data having a second number of bits per pixel greater than the first number of bits per pixel

combining the monochrome output signal pixel data with the first, second, and third color output signal pixel data to provide first, second, and third enhanced color image signals having improved gradation compared to the first, second, and third color output signals.

wherein the first, second, and third colors comprise red, green, and blue primary colors

Claims 19 – 32 (Canceled)

Claim 33 (Currently amended): A process for producing image signals comprising

receiving a first color image signal from a first color photoconverter for a first color

receiving a second color image signal from a second color photoconverter for a second color

receiving a third color image signal from a third color photoconverter for a third color

digitizing the first, second, and third color output signals into respective first, second, and third color pixel data each having a first number of bits per pixel

receiving monochrome image signals from a monochrome photoconverter for black and white, wherein the monochrome image signals have higher gradation than the first, second and third color output signals

<u>digitizing the monochrome image signals into monochrome pixel data having a second</u> <u>number of bits per pixel greater than the first number of bits per pixel</u>

processing the monochrome ~~output signal~~ <u>pixel data</u> and the first, second, and third color ~~output signal~~ <u>pixel data</u> to provide first, second, and third enhanced color image signals having improved gradation compared to the first, second, and third color image signals.

Claim 34 - 41 (Canceled)

Claim 42 (Previously presented) The image sensor unit of claim 1, wherein the first, second, and third colors comprise red, green and blue primary colors.

Claim 43 (Currently amended) The image sensor unit of claim 42, wherein the color signal correction unit further comprises

a color difference calculation circuit to convert the first, second, and third color ~~output signal~~ <u>pixel data</u> into a ~~brightness signal, a~~ first color difference signal~~,~~ and a second color difference signal, and

an RGB correction circuit to convert the monochrome ~~output signal~~ <u>pixel data</u> , the first color difference signal, and the second color difference signal into the first, second, and third enhanced color image signals.

Claim 44 (Previously presented) The image sensor unit of claim 43, wherein the color correction unit further comprises a parameter storage memory.

Claim 45 (Canceled)

Claim 46 (Previously presented) The process for producing enhanced image signals of claim 18, wherein the first, second, and third colors comprise red, green and blue primary colors.

Claim 47 (Currently amended) The process for producing enhanced image signals of claim 46, wherein combining further comprises

converting the first, second, and third color ~~output signal~~ pixel data into a ~~brightness signal, a~~ first color difference signal, and a second color difference signal, and

reverse converting the monochrome ~~output signal~~ pixel data , the first color difference signal, and the second color difference signal into the first, second, and third enhanced color image signals.

Claim 48 (Previously presented) The process for producing enhanced image signals of claim 47, wherein converting and reverse converting are performed using parameters stored in a parameter storage memory.

Claim 49 (Canceled).

Claim 50 (Previously presented) The process for producing image signals of claim 33, wherein the first, second, and third colors comprise red, green and blue primary colors.

Claim 51 (Currently amended) The process for producing image signals of claim 50, wherein processing further comprises

~~digitizing the first, second, and third color output signals into respective digital signals each having a first number of bits~~

~~digitizing the monochrome output signal into a digital signal having a second number of bits greater than the first number of bits~~

converting the ~~digitized~~ first, second, and third color ~~output signal~~ pixel data into a ~~brightness signal, a~~ first color difference signal, and a second color difference signal, and

reverse converting the ~~digitized~~ monochrome ~~output signal~~ pixel data, the first color difference signal, and the second color difference signal into the first, second, and third enhanced color image signals.

Claim 52 (Previously presented) The process for producing enhanced image signals of claim 51, wherein converting and reverse converting are performed using parameters stored in a parameter storage memory.